

## CLAIMS

1. A heat-shrinkable resin film characterized in that the film has heat shrinkage in the maximum shrinkage direction of 20% or higher, when a 10 cm × 10 cm square sample cut out thereof is immersed in hot water at 85°C for 10 seconds, pulled out, subsequently immersed in water at 25°C for 10 seconds, and then pulled out; a content of nitrogen atoms in a surface of the film of 0.1% to 3.0%; and wet tension of the surface of the film of 36 mN/m or higher.

2. A heat-shrinkable resin film roll characterized in that the roll is obtained by winding up a heat-shrinkable resin film having heat shrinkage in the maximum shrinkage direction of 20% or higher, when a 10 cm × 10 cm square sample cut out thereof is immersed in hot water at 85°C for 10 seconds, pulled out, subsequently immersed in water at 25°C for 10 seconds, and then pulled out, whose at least one surface has a content of nitrogen atoms of 0.1% to 3.0% and wet tension of 36 mN/m or higher, and further characterized in that, when the rolled film is sampled at a first sampling part located up to 2 m apart from the end of the rolled film and at other sampling parts located after the first sampling part at intervals of about 100 m and an average content of nitrogen atoms of each sample is

calculated, then the content of nitrogen atoms of each sample is within the  $\pm 0.8\%$  range based on the above average content of nitrogen atoms.

3. The heat-shrinkable resin film according to claim 1, wherein the film comprises a polyester resin film or a polystyrene resin film.

4. The heat-shrinkable resin film or the heat-shrinkable resin film roll according to claim 2, wherein the film roll comprises a polyester resin film or a polystyrene resin film.

5. A process for producing the heat-shrinkable resin film roll according to claim 2 characterized in that at least one surface of the heat-shrinkable film is treated by corona or plasma under a nitrogen atmosphere, followed by winding up the heat-shrinkable film.

6. The process for producing the heat-shrinkable resin film roll according to claim 5, wherein the nitrogen atmosphere in the corona or plasma treatment has oxygen concentration of 1500 ppm or lower, and variability in the oxygen concentration is within  $\pm 200$  ppm from the average oxygen concentration over the entire length of the film.

7. The heat-shrinkable resin film roll according to claim 2, wherein the film has at least 200 mm wide and at least 300 m long.

8. The heat-shrinkable resin film according to claim

1 which is a heat-shrinkable polyester film characterized in that, after the film is immersed in an aqueous 1.5% NaOH solution at 85°C for 15 minutes, a lowering rate of a content of nitrogen atoms is 50% or more.

5           9.    The heat-shrinkable resin film according to claim 1 which is a heat-shrinkable resin roll characterized in that, after the same surfaces of the film are bonded to each other by heat sealing at 75°C, both surfaces of the film show peeling strength of 5 N/15 mm wide or lower.

10           10.   The heat-shrinkable resin film roll according to claim 1 which is a heat-shrinkable resin film characterized in that wet tension of a surface containing nitrogen atoms is 45 mN/m or lower; three-dimensional surface roughness  $S\Delta a$  (average three-dimensional gradient) of at least one  
15 surface of the film is in the range of 0.01 to 0.04; and the surface has substantially no projection having at least 1.89  $\mu\text{m}$  high.

          11.   The heat-shrinkable resin film according to claim 1 which is a heat-shrinkable polyester film characterized  
20 in that at least one surface of the film has specific surface resistance of  $1 \times 10^{13}$  ( $\Omega \cdot \text{cm}$ ) or less.